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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,402	05/24/2001	Norio Takahashi	05225.0633	9191
22852	7590	12/05/2003	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005			ELKASSABGI, HEBA	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

### Office Action Summary

**Application No.**

09/863,402

**Applicant(s)**

TAKAHASHI ET AL.

**Examiner**

Heba Elkassabgi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign not mentioned in the description: Therefore, the “planar surface portion configured to planarly contact a length of at least one side of the permanent magnet,” must identified within the specification. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following description of figure 4 of the reference signs not mentioned in the description: Description of the prior art of Figure 4 is not disclosed within the description of the related art. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference signs in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (U.S. Patent 6008559) and further in view of Nagate et al. (U.S. Patent 5369325).

A. Asano et al. discloses in Figure #1 a stator (1) having an armature coil (three-phase winding)(not shown) wherein a rotor (2) is configured for providing magnetic irregularities in a circumferential direction and that the rotor (2) includes permanent magnets (23) in a plurality of permanent magnet embedding holes (slits)(22), in the rotor core (21). The magnetic flux of an armature passing through adjacent magnetic poles is canceled, and the rotor (2) includes non-magnetic regions on a circumferential side of the permanent magnets (23). Furthermore, in regards to claims 6 and 7, a centrifugal force on the permanent magnet and a radiused portion of a root of a projection of a permanent magnet is supported by a face intersecting a direction of magnetization of the permanent magnet at right angles and on an opposite side of the permanent magnet embedding hole (slits)(22) to a side of the non-magnetic region. However, Asano does not disclose that a plurality of projections project into the embedding hole.

B. Nagate et al, discloses in Figure 19 triangular projecting edges (36) projecting inwardly into the slots (25), in which the permanent magnets (30 and 31) are held by the edges (36) in order to hold the respective magnets within the slots. Nagate et al. further discloses in figure 19, the permanent magnet (30,31) in which a plurality of projections (37) having projecting edges (36) in which the projections (37) having a substantially planar surface portion (B) configured to contact a length of at least one side of the permanent magnet (30,31). Further more, in regards to Claims 2,3, and 4, Nagate et al. illustrates projections (37) being on opposite edges of the permanent magnet embedding slots (25) and that projections (37) are provided towards the center of the permanent magnet embedding slots (25). Additionally, Nagate et al. discloses that the magnetic flux is prevented from passing through the rotating shaft to improve the efficient of the electric motor.

C. It would have been obvious to one of ordinary skill in the art to combine the structure of Asano et al. with the slot structure of Nagate et al, in order for the magnets to be held securely by the triangular edges in order to firmly hold the magnet in place.

D. In regards to Claim 5, Asano et al. discloses the claimed invention except for the percentage of contact of the permanent magnet and the projection for positional location of the permanent magnet. It would have been obvious to one having ordinary skill in the

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art at the time the invention was made to base the positional length of the permanent magnet with the projections in relation to one another, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215.

E. In regards to Claims 8-11, Asano et al. discloses the claimed invention except for the percentage of the thickness of the permanent magnet in relation to thickness of the wall region of the rotor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to base the wall thickness of the rotor core in relation to the position of the permanent magnet, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215.

### ***Response to Arguments***

5. Applicant's arguments filed 09/24/2003, have been fully considered but they are not persuasive. Asano et al. discloses a permanent magnet motor having a rotor and a stator, in which the rotor has permanent magnets embedding holes in order to secure the permanent magnets within the rotor and to provide magnetic irregularities in a circumferential direction.

6. Nagate et al. further discloses a permanent magnet motor having a rotor and a stator, in which the rotor having permanent magnets s inserted within the permanent magnet embedding holes. However, Nagate et al. goes one-step further by having projections to finding engage the permanent magnet within the rotor. The projection edges (36) allows fro the insertion of the permanent magnet (30,31) without having to enlarge the slot (25) or reduce the size of the permanent magnet (30,31) and also prevents the permanent magnet from having to drop off by having an effective engagement within the rotor.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Heba Elkassabgi

  
BURTON S. MULLINS  
PRIMARY EXAMINER